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ABSTRACT

This study sought to extend previous research by investigating performance of intellectucally gifted children on the Mental Processing Composite of the Kaufman Assessment Battery for Children (K-ABC). A sample of 54 children (aged 6-12) referred for possible gifted placement were administered the Sequential and Simultaneous scales. Average scores on the Sequential and Simultaneous scales were analyzed, and ipsative comparisons were examined. There were no significant differences between mean scores from the Sequential and Simultaneous scales. Ipsative comparisons indicated that the majority, 57 percent, exhibited no statistically significant differences between Sequential and Simultaneous scores. Thirty-one percent of the sample had a significant Sequential strength, compared to only 11 percent who had a Simultaneous strength. Spatial Memory was the most difficult subtest for the sample; Number Recall and Matrix Analogies stood out as the subtests on which subjects performed the best. Results of the investigation did not strongly support a characteristic profile on the K-ABC for children referred for gifted programs. (JDD)

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K-ABC Mental Processing Profiles for Gifted Referrals

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The Mental Processing Composite of the Kaufman Assessment Battery for Children (K-ABC; Kaufman & Kaufman, 1983) comprises the Sequential and Simultaneous scales and numerous research investigations have attempted to determine characteristic profiles on the two scales for exceptional children. Kamphaus and Reynolds (1988), in a review of K-ABC research, indicated that studies with learning disabled children report average Sequential scores that are lower than average Simultaneous scores. The opposite pattern was found with emotionally and behaviorally disturbed children, while mentally retarded evidenced no differences between the two scales.

The studies which have investigated K-ABC performance for intellectually gifted children have reported inconsistent Sequential-Simultaneous score differences. Mealor and Curtis (1985) and McCallum, Karnes, and Edwards (1984) found that average scores on the Simultaneous scale were higher than those on the Sequential scale for samples of children placed in gifted programs. Barry (1983) found the opposite pattern for a sample of children referred for possible gifted placement and Naglieri and Anderson (1985) reported no differences between the two scales for children placed in a gifted program. In a review of average subtest scores from the four studies, Kamphaus and Reynolds (1988) concluded that the Gestalt Closure subtest was usually the most difficult for gifted children and that these children received their highest scores on the Triangles and Matrix Analogies subtests.

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They suggested that gifted children tend to exhibit their best performance on subtests with higher "g" loadings.

The purpose of the present study was to extend previous research by investigating K-ABC Mental Processing performance for a sample of children referred for possible gifted placement. Average scores on the Sequential and Simultaneous scales and subtests were analyzed, as was done by Kamphaus and Reynolds (1988). However, this paper also summarizes ipsative comparisons, or comparisons undertaken to determine if individual children have significantly higher Sequential or Simultaneous scores or relative strengths and weaknesses for subtests. It was felt that the summary of ipsative comparisons, by providing information about typical strengths and weaknesses, would be particularly useful for practitioners who routinely perform these comparisons for the children they assess.

Method

Subjects

A total of 54 children, all considered for placement into the gifted program in a large metropolitan school district, were included in the sample. The subjects ranged in age from 6 through 12 years (M= 8.1, SD= 1.7). A total of 25 subjects were male and 29 were female; 21 were black and 33 were white.

Procedure

All subjects were administered the K-ABC Mental Processing subtests by school psychologists employed by the school district. Standard scores for the Sequential and Simultaneous scales and Mental Processing Composite and scaled scores for the subtests were determined according to procedures outlined in the K-ABC manual. A t-test for dependent observations was used to determine if there was a significant difference between mean Sequential and Simultaneous

scores. For each subject, ipsative comparisons were conducted to determine if his or her Sequential and Simultaneous scores differed significantly and if he or she had significant subtest strengths and weaknesses, at the .05 level of significance. The numbers of subjects who exhibited relative Sequential or Simultaneous strengths and relative subtest strengths or weaknesses were determined.

Results and Discussion

Means and standard deviations for K-ABC global scale and subtest performance are reported in Table 1. Although the mean Sequential score was somewhat higher than the mean Simultaneous score, the difference between the two was not significant (t (53) = 1.47, $p > .05$). The finding of a higher mean for the Sequential scale is consistent with Barry (1983) for a sample of gifted referrals but inconsistent with the pattern reported by Mealor and Curtis (1985) and McCallum et al. (1984) for samples of children placed in gifted programs. However, since the scores from the two scales were not significantly different for the present sample, it is not possible to hypothesize that gifted referrals and children placed in gifted programs differ in their K-ABC score patterns.

Insert Table 1 about here

Ipsative comparisons for the subjects, summarized in Table 1, indicate that the majority, or 57%, exhibited no statistically significant differences between their Sequential and Simultaneous scores. Thus, it appears fairly typical for gifted referrals to have comparable sequential and simultaneous skills. When a significant difference occurred between the two scales, it was

far more likely for a subject to exhibit a strength on the Sequential scale; 31% of the sample had a significant Sequential strength compared to only 11% who had a Simultaneous strength.

The pattern of mean subtest performance, reported in Table 1, is inconsistent with previous research. Spatial Memory was the most difficult subtest for the sample; Number Recall stood out as the subtest on which subjects performed the best, with Matrix Analogies the second best subtest. The sample's outstanding performance on Number Recall, a Sequential subtest, evidently contributed to the higher scores on the Sequential scale. Triangles and Matrix Analogies usually had the highest mean scores and Gestalt Closure the lowest mean score in previous research with gifted children, but both Triangles and Gestalt Closure fell in the middle range of relative difficulty for the present sample. The easiest and most difficult subtests found in the present subtest do not support the characteristic pattern, suggested by Kamphaus and Reynolds (1988), of better performance by gifted children on subtests with higher "g" loadings.

Table 1 also summarizes ipsative comparisons for subtests. No particular subtest stood out as being a strength or weakness for the majority of the subjects. The most strengths were evident for Number Recall and Matrix Analogies and the most weaknesses for Spatial Memory. These findings are comparable to the pattern of mean subtest scores.

In conclusion, the results of this investigation did not strongly support a characteristic profile on the K-ABC for children referred for gifted programs. Although most of the children in the sample did not exhibit a significant difference between Sequential and Simultaneous scores, findings did suggest that, when differences in the two processing scales occurred, they

were usually in favor of the Sequential scale. Inspection of subtest performance indicated that Number Recall, a Sequential subtest, was the best subtest for these gifted referrals and that there was no evidence for better performance on subtests with higher "g" loadings.

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Table 1

Means, Standard Deviations, and Results of Ipsative Comparisons on the K-ABC

(N=54)

Global Scale	M	SD	Ipsative Comparisons
Sequential	117.4	11.4	Sequential>Simultaneous:17 (31%)
Simultaneous	114.8	12.0	Simultaneous>Sequential:6 (11%)
Mental Processing Composite	118.7	11.6	Sequential=Simultaneous:31 (57%)

Subtest	M	SD	# Strengths	# Weaknesses	Neither
Hand Movements	11.9	2.7	1 (2%)	5 (95)	48 (89%)
Gestalt Closure	12.0	3.2	4 (7%)	5 (95)	45 (83%)
Number Recall	13.9	2.8	14 (26%)	1 (2%)	39 (72%)
Triangles	12.2	2.5	4 (7%)	3 (6%)	47 (87%)
Word Order	12.6	1.9	7 (13%)	1 (2%)	46 (85%)
Matrix Analogies	13.1	2.5	12 (22%)	2 (4%)	40 (75%)
Spatial Memory	11.1	2.4	0 (0%)	12 (22%)	42 (78%)
Photo Series	11.8	2.2	1 (2%)	3 (6%)	50 (93%)